REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-16 are currently pending. Claims 1, 3, 5, 6, 8, and 10 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, Claims 1 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chadwick et al. ("Layered Construction for Deformable Animated Characters") (hereinafter "the Chadwick et al. reference") in view of Foley et al. ("Computer Graphics Principles and Practice") (hereinafter "the Foley et al. reference") and Chaki ("A Study on Flexible Surface Control by Control Lattice") (hereinafter "the Chaki reference"); Claims 2 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Chadwick et al., Foley et al., and Chaki references, further in view of U.S. Patent No. 6,198,979 to Konno (hereinafter "the '979 patent"); Claims 3-5, 8-10, 15, and 16 were objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form; and Claims 11-14 were allowed.

Amended Claim 1 is directed to a method of generating a free-form surface model by a rounding operation, comprising: (1) applying a linear transformation as the rounding operation to a lattice polygon model to generate vertices of a free-form surface model corresponding to respective vertices of the lattice polygon model, the linear transformation having an inverse transformation that serves as an inverse rounding operation to reconstruct the lattice polygon model from the free-form surface model; and (2) generating control points of cubic Bezier curves that connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model. Claim 1 has been amended to clarify that the linear transformation has an inverse transformation that serves as an inverse

rounding operation to reconstruct the lattice polygon model from the free-form surface model. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.[1]

Applicants respectfully submit that the rejection of Claim 1 under 35 U.S.C. § 103(a) is rendered moot by the present amendment to Claim 1.

The Chadwick et al. reference is directed to a method for creating and animating computer-generated characters using control points of geometric modeling deformations. However, Applicants respectfully submit that the Chadwick et al. reference fails to disclose a linear transformation having an inverse transformation that serves as an inverse rounding operation to reconstruct a lattice polygon model from a free-form surface model, as recited in amended Claim 1. Moreover, contrary to the assertion in the Office Action, Applicants respectfully submit that the passage on page 247 of the Chadwick et al. reference fails to disclose a linear transformation. Assuming arguendo, that the cited passage discloses that a cubic solid is deformed by some type of transformation, there is no indication that such a transformation must be linear. Moreover, as stated above, the Chadwick et al. reference fails to disclose a linear transformation that has an inverse transformation that serves as an inverse rounding operation to reconstruct a lattice polygon model from a free-form surface model, as recited in Claim 1.

The Foley et al. reference is a textbook directed to principles of computer graphics. In particular, the Office Action refers to a chapter disclosing polygon meshes as a method of representing curves and surfaces. However, Applicants respectfully submit that the Foley et al. reference fails to disclose a linear transformation applied to a lattice polygon model to generate vertices of a free-form surface model, wherein the linear transformation has an

[1] See page 13 of the specification.

inverse transformation that serves as an inverse rounding operation to reconstruct the lattice polygon model from the free-form surface model, as recited in amended Claim 1.

The Chaki reference is directed to flexible surface control using a control lattice and includes a description of a rounding operation. In particular, as shown in Figure 2.2 and in the description on pages 8 and 9, the Chaki reference discloses a rounding operation that uses Gregory patches or rational-boundary Gregory patches as a format for expressing the shape of a fillet surface algebraically. The algorithm consists of the five steps disclosed on pages 8 and 9 of the Chaki reference. However, Applicants respectfully submit that the Chaki reference fails to disclose applying a linear transformation as a rounding operation to a lattice polygon model to generate vertices of a free-form surface model corresponding to respective vertices of the lattice bound model, wherein the linear transformation has an inverse transformation that serves as an inverse rounding operation to reconstruct the lattice polygon model from the free-form surface model. There is no indication in the Chaki reference that the algorithm described for rounding is in any way a linear transformation that has an inverse transformation that serves as an inverse rounding operation to reconstruct a lattice polygon model from a free-from surface model, as recited in amended Claim 1.

Thus, no matter how the teachings of the Chadwick et al., Foley et al., and Chaki references are combined, the combination does not teach or suggest applying a linear transformation to a lattice polygon model to generate vertices of a free-form surface model corresponding to respective vertices of the lattice polygon model, wherein the linear transformation has an inverse transformation that serves as an inverse rounding operation to reconstruct the lattice polygon model from the free-form surface model, as recited in amended Claim 1. Accordingly, Applicants respectfully submit that amended Claim 1 patentably defines over any proper combination of the Chadwick et al., Foley et al., and Chaki references.

Claim 6 recites limitations analogous to the limitations recited in Claim 1. Moreover, Claim 6 has been amended in a manner analogous to the amendment to Claim 1. Accordingly, for the reasons stated above for the patentability of Claim 1, Applicants respectfully submit that the rejection of Claim 6 is rendered moot by the present amendment to that claim.

Regarding the rejection of dependent Claims 2 and 7 under 35 U.S.C. § 103, Applicants respectfully submit that the '979 patent fails to remedy the deficiencies of the Chadwick et al., Foley et al., and Chaki references, as discussed above. Accordingly, Applicants respectfully submit that the rejection of Claims 2 and 7 is rendered moot by the present amendment to independent Claims 1 and 6.

Thus, it is respectfully submitted that independent Claims 1, 2, 6, and 7 patentably define over any proper combination of the Chadwick et al. reference, the Foley et al. reference, the Chaki reference, and the '979 patent.

Based on the indicated allowability of Claims 3-5 and 8-10, Claims 3, 5, 8, and 10 have been rewritten in independent form to incorporate the limitations of respective base Claims 1 and 6. Accordingly, Applicants respectfully submit that independent Claims 3, 5, 8, and 10 (and all associated dependent claims) are in condition for formal allowance.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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